FrieslandCampina

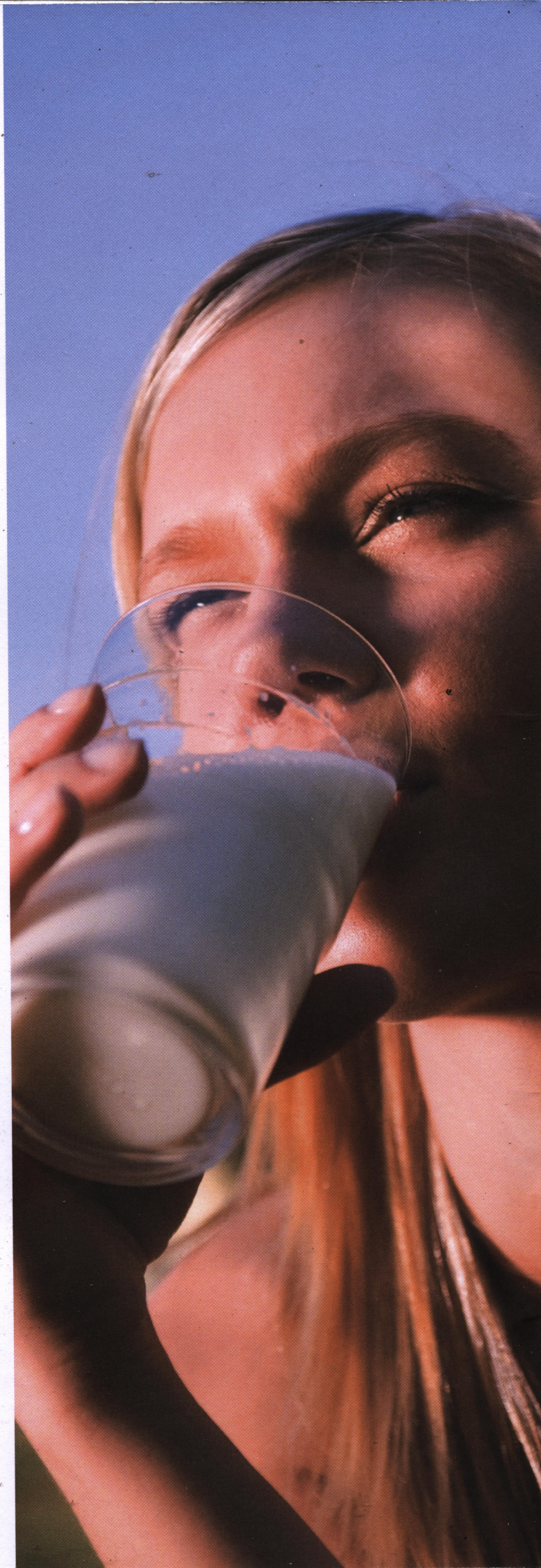
Institute
for dairy nutrition and health

Milk and health, the facts at a glance

About this brochure

Milk contains essential nutrients including valuable proteins, vitamin B2 and B12 and minerals such as calcium. Milk and products made of milk fit into a healthy diet and are included in dietary guidelines throughout the world.

There are varying opinions and questions about the health of milk. Positive, but also critical such as: milk is for calves, milk can cause mucus production, milk is not necessarily good for our bones. That is why the most frequently asked questions about milk and health are answered in this brochure based on science and nutritional guidelines.



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Does milk fit in a healthy diet?

Milk and milk products are included in many dietary guidelines worldwide. From Europe to Asia and from Africa to the Americas, milk is regarded as an important food at all life stages, from the very young to the elderly. This becomes apparent when looking at food based dietary guidelines more closely. In general, gender and age-specific guidelines are used. Milk provides various essential nutrients: valuable proteins, vitamin B2 and B12 and minerals such as calcium, phosphorus and potassium.

Food Based Dietary Guidelines are guidelines for a healthy diet and are being formulated to prevent nutrient deficiencies. In addition, they have increasing attention for the prevention of chronic non-communicable diseases. The dietary guidelines from different countries contain similar broad messages based on principles of nutritional science (such as eating enough fruit and vegetables). However, national dietary guidelines often contain unique features based on that country's priorities and cultural habits. In most dietary guidelines, the recommended amount of milk and dairy products, such as yoghurt and cheese, is 2-3 portions per day.

TABLE Dairy recommendation in dietary guidelines

Not all countries have published their own dietary guidelines, and often use the dietary guidelines compiled by the USA. The FAO website gives an overview of dietary guidelines worldwide. Please find a summary below.

EUROPE

Country	Recommendations for adults	Source
Austria	3 servings of milk and milk products daily (1 portion = 200 ml milk or 150-180g yoghurt or 30-60g of cheese)	The Ministry of Health, Austria www.bmg.gv.at
Belgium	3-4 (small) glasses of milk (products) (450-600 ml) and 1-2 slices of cheese (20-40g)	The Federal Public Service Health, Food Chain Safety and Environment www.health.belgium.be
France	3 servings per day	The Ministry of Health, Family and Disability www.mangerbouger.fr
Germany	200-250g milk and milk products and 50-60g cheese	Deutsche Gesellschaft für Ernährung www.dge.de
Greece	2 servings of dairy products	Supreme Scientific Health Council, Hellenic Ministry of Health
Hungary	3-4 servings of dairy products daily (1 portion is 200 ml milk, yoghurt or kefir, 50g of low-fat cottage cheese or 30g cheese)	Ministry of Health of Hungary
Ireland	3 servings of milk, yoghurt or cheese each day	The Department of Health and the Health Service Executive acknowledge the work of the Healthy Eating Guidelines Working Group, Food Safety Authority of Ireland
Spain	2-4 servings daily (milk, yoghurt or cheese)	Spanish Society of Community Nutrition (SENC) http://www.nutricioncomunitaria.org/
Switzerland	3 servings of dairy products daily (1 portion is 200 ml milk, 150g yoghurt, 30g of cheese)	Schweizerische Gesellschaft für Ernährung www.sge-ssn.ch
The Netherlands	450 ml of milk products and 30g of cheese	Ministry of Health, Welfare and Sport www.gr.nl www.voedingscentrum.nl
UK	3 servings of dairy products a day (1 serving = 200 ml milk, 150g yogurt or 30g of cheese)	Department of Health www.nhs.uk

ASIA

Country	Recommendations for adults	Source
China	Average 300 ml of milk per person per day	www.cnsoc.og/en Chinese Nutrition Society
Hong Kong	1-3 glasses a day. Quantity depends on age; the younger the consumer, the more dairy is recommended but dairy is recommended for all ages 1 glass = 240 ml	Central Health Education Unit, Department of Health www.cheu.gov.hk
Indonesia	2-3 servings per day of animal protein such as meat, fish, chicken, eggs and milk is recommended	Ministry of Health of the Republic of Indonesia
Malaysia	1-2 servings daily	Published by the Nutrition Society of Malaysia
Singapore	2-3 servings of meat or alternatives are recommended. Dairy is a meat alternative. 1 glass of low-fat milk or 200 ml yoghurt counts as 1 a serving	Department of Nutrition, Ministry of Health. http://www.nutrition.com.sg/
Thailand	1-2 glasses of milk/yoghurt a day 1 glass = 250 ml	Healthy eating for Thais. Nutrition Division, Department of Health, Ministry of Public Health
Vietnam	Consume milk and dairy products according to age	Vietnam Recommended Dietary Allowances National Institute of Nutrition, Ministry of Health, Vietnam

MIDDLE EAST

Country	Recommendations for adults	Source
Arab countries	2-3 servings (1 cup of milk, laban or yoghurt, 45g of cheese, 1 tablespoon cream cheese, 1.5 tablespoon labnah)	Dietary Guidelines for Arab Countries, prepared by Arab Center for Nutrition
Oman	The recommended amount from the milk group is 1 serving where 1 cup of milk is equivalent to 1.5 oz (45g) natural cheese or 2 oz (60g) processed cheese	The Omani Guide to Healthy Eating, Department of Nutrition, Ministry of Health Oman
Saudi Arabia	Eat lean meat, offal, eggs, fish, chicken, milk and milk products in moderation	Dietary Recommendations, goals and guidelines for Health in Saudi Arabia
Turkey	2 servings for adults. One serving is 200 cc milk or yoghurt, or two matchbox-sized pieces of cheese	Dietary Guidelines for Turkey, The Ministry of Health of Turkey

AFRICA

Country	Recommendations for adults	source
South Africa	About two cups of milk (maas, yoghurt or sour milk) are recommended per person per day. Cheese may be eaten instead of milk drinks.	South African guidelines for healthy eating, Department of Health

SOUTH AMERICA

Country	Recommendations for adults	source
Argentina	Consume milk, yoghurt or cheese daily. This is necessary at all age	Dietary Guidelines for Argentina's population. Argentina Association of Dieticians and Nutritionists Dieticians
Bolivia	Increase intake of low-fat dairy products	Ministerio de Salud y Deportes (as lead agency and coordinator and responsible for the development of the Dietary Guidelines)
Brazil	The recommended intake is 3 portions of milk and dairy, and 1 portion of lean meat, fish or eggs. Adults should choose low-fat milk and dairy	Ministry of Health, Brazil
Chile	Consume dairy products 3 times daily, such as milk, yoghurt, cheese or cream cheese, preferably low-fat or non-fat	Ministry of Health, Santiago, Chile

NORTH AMERICA

Country	Recommendations for adults	source
Canada	500 ml (2 cups) of milk products	Minister of Health, Canada http://www.hc-sc.gc.ca
USA	3 cups of milk per day	United States Department of Agriculture (USDA) www.choosemyplate.gov

OCEANIA

Country	Recommendations for adults	source
Australia	2-3 portions per day. 1 portion is 250 ml milk, 1 cup of evaporated milk, 40g of cheese or 200g yoghurt	Australian Government Department of Health and Aging www.health.gov.au
New Zealand	2 servings of milk or milk products a day. 1 serving is 1 glass of milk (250 ml), 1 bowl of yoghurt (150g) or 2 slices of cheese (40g)	Ministry of Health, New Zealand http://www.health.govt.nz

Based on:
FAO: overview worldwide dietary guidelines:
http://www.fao.org/ag/humannutrition/nutritioneducation/fbdg/en/

Does skimmed milk contain fewer nutrients than full fat milk?

The main difference between full fat milk and skimmed milk is the fat content and therefore the calorie content. The level of the most important essential nutrients in milk is independent of the fat content, and equal in both types of milk.

Skimmed or fat-free milk is milk where most fat has been removed resulting in a lower calorie content. Full fat milk contains 3-4% of fat, semi-skimmed or low-fat milk contains around 1.5% fat, and skimmed or fat-free milk contains less than 0.5 % fat.

Most nutrients are in the non-fat portion of the milk and will not be affected by skimming the milk. Both full fat, semi-skimmed, and skimmed milk contain comparable amounts of high quality proteins, vitamin B2 and B12 and minerals, such as calcium, phosphorus and potassium. Milk fat, however, contains vitamin A and therefore the level of this vitamin will decrease without the fat from 8.8% RDA in whole milk to 0.3% RDA in skimmed milk.

TABLE Nutritional value of skimmed, semi-skimmed and full fat milk per 200 ml glass:

		Full fat milk		Semi-skimmed milk		Skimmed milk	
		per 200 ml	%RDA*	per 200 ml	% RDA*	per 200 ml	%RDA*
Energy	kJ/kcal	511/122		385/92		293/70	
Fat	g	6.8		3		0.2	
Carbohydrates	g	9		9.2		9.8	
Protein	g	6.6		6.8		7.4	
Salt	g	0.22	4.3	0.21	4.2	0.22	4.4
Vit B2	mg	0.36	25.7	0.36	25.7	0.36	25.7
Vit B12	mcg	0.78	31.2	0.88	35.2	0.86	34.4
Potassium	mg	330	16.5	324	16.2	338	16.9
Calcium	mg	246	30.8	244	30.5	254	31.8
Phosphorus	mg	204	29.1	204	29.1	212	30.3

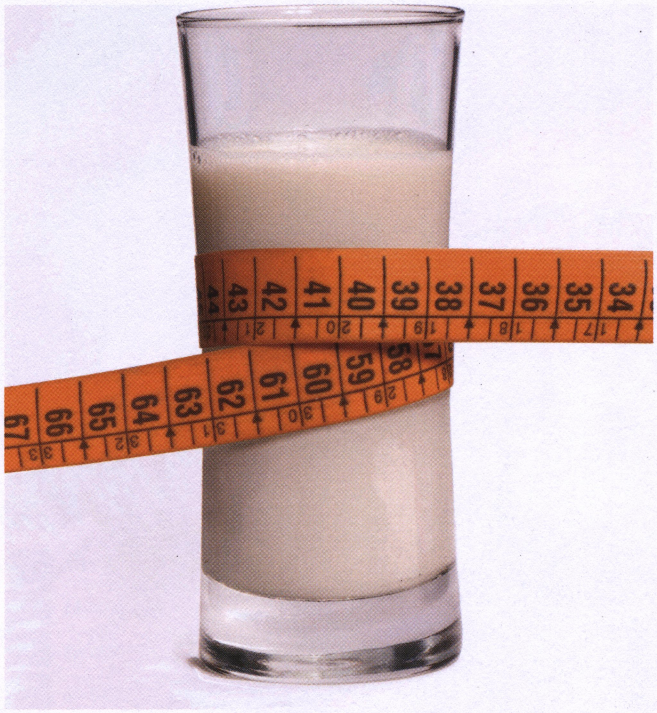
* Recommendations are based on the EU Regulation 1169/2011 on Food Information to Consumers. Source: Nevo 2011

The vitamin A level is below 15% RDA/200 ml and is therefore not required to be included on packaging in the EU. In some countries milk is fortified with fat-soluble vitamin A and/or D. In that case the levels of vitamin A and D are independent of the fat level of the milk product.

Will milk make you gain weight?

People who eat and drink more than the energy they expend will gain weight, no matter what they eat or drink. It is recommended to use lower calorie dairy products for weight management. Often, these products have a low-fat content and no added sugar. Some people think milk is fattening. Science does not endorse this.

Research shows that low-fat milk and products made of milk may even play a positive role in weight management. Recent meta-analyses of randomized controlled clinical trials prove that the consumption of dairy products in calorie controlled diets may have modest benefits in facilitating weight loss, and favourable changes in body composition. Along the same lines, a recent systematic review concluded that it appears dairy products have a preventative effect on the risk of becoming overweight or obese. Dairy products used regularly over a period of several years, make a small but significant difference to overall public health. None of the existing meta-analyses or review studies have indicated that dairy products, as part of a calorie controlled diet or not, could lead to an increase in body weight or fat mass.



Dietary guidelines worldwide recommend the intake of 2-3 portions of dairy produce per day as a part of a balanced diet. One glass (200 ml) of semi-skimmed milk provides about 90kcal (may vary slightly from country to country) which is 5% of the average daily energy requirement. And milk also provides essential nutrients important for many bodily functions.

Based on:

1. Dennis EA, Flack KD, Davy BM. Beverage consumption and adult weight management: A review. Eat Behav. 2009 Dec;10(4):237-46.
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Adults do not continue to grow so do adults need calcium?

Calcium is the most abundant mineral in the human body. There is increasing scientific evidence substantiating the need for adequate calcium intake throughout life, from the young to the elderly. Calcium not only supports growth in children, but is also important for optimal bone health in all age groups. Milk and products made of milk are a good source of calcium.

Calcium is the most abundant mineral in bones and is an essential nutrient at all stages of life. As bone is a living tissue, constantly regenerated by being broken down and rebuilt. Therefore, an adequate intake of calcium is important for people at all ages. Calcium is essential for bone development in children and adolescents. As peak bone mass is reached at about the age of 25-30 years, optimal calcium intake is important in early adulthood. Calcium appears to be equally important throughout life as it not only contributes to the development of strong bones, but also to their continuing maintenance of bone mass, bone strength and bone mineral density (BMD). According to the recommendations from various scientific bodies worldwide, the highest levels of calcium intake are needed during adolescence and old age (see table).

Milk and milk products are an integral part of a healthy, balanced diet for all ages and are a good source of calcium. One glass of milk (200 ml) delivers approximately 30% of the recommended daily amount[1] of calcium.

TABLE Calcium intake recommendations (mg/day) from various scientific bodies

Age	United States[4]		United Kingdom[9]		The Netherlands[5]		Australia/ New Zeeland[6]		WHO/FAO[7]	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1 - 3 years	700	700	350	350	500	500	500	500	500	500
9 - 13 years	1300	1300	1000	800	1200	1100	1300	1300	1300	1300
14 - 18 years	1300	1300	1000	800	1200	1100	1300	1300	1300	1300
51 - 70 years	1000	1200	700	700	1100	1100	1000	1300	1000	1300
> 70 years	1200	1200	700	700	1200	1200	1300	1300	1300	1300

[1] EU Regulation 1169/2011 on Food Information to Consumers.

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What is the role of milk in keeping strong bones?

Heredity is the main factor in having strong bones. It determines 60-80% of the peak bone mass, the maximum bone density. Factors such as diet and exercise also play an important role in bone development during growth, and in the preservation of bone tissue in adults and the elderly. Calcium and protein derived from foods including milk and products made of milk are important for development and maintenance of bones.

Bones consist of a matrix of protein, filled with calcium phosphate and other minerals such as sodium, magnesium, potassium and zinc. Throughout our lives bone tissue is continually broken down (resorption) and rebuilt (formation). This occurs partly for recovery from minor 'damage' and to adjust the density of the load-level on the bone. From birth until about the age of 30, bone formation exceeds bone resorption and bone density increases, leading to a peak bone mass (PBM). From the age of about 50, peak bone mass diminishes. The higher the PBM, the stronger the bones later in life.

The peak bone mass is mainly determined by genetics. There are some factors you can influence yourself, including healthy diet, sufficient exercise, no smoking, moderate alcohol intake. In addition, the use of certain medications influence bone density. Protein, calcium, vitamin D and physical bone load are the main factors contributing to good bone health. This applies particularly in puberty when bones are growing fast and 25-50% of the peak bone mass is developed. Consuming enough of these nutrients and exercising are also important at a later age to maintain bone strength.

Around a decade ago a number of scientific publications stated that increased protein intake may have an adverse effect on bone health as a result of an increased amount of calcium in the urine (hypercalciuria) and a decline of calcium in the bones. However, this is not confirmed by more recent scientific research. Only in the event of a very high protein intake, in combination with a low calcium intake, could there be an adverse effect on bone health. This is virtually eliminated if milk and products made of milk are part of your diet. It is also accepted that excessive consumption of caffeine, carbonated drinks, alcohol and salt can have an adverse effect on the calcium balance.

Milk is an important source of protein, calcium and phosphorous and therefore complements a diet that contributes to healthy bones. For people with low vitamin D-intake, milk enriched with vitamin D is advisable.

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Is a calcium supplement a good alternative to drinking milk?

Milk provides a variety of essential nutrients such as protein, vitamin B2 and B12 and minerals including calcium, phosphorus and potassium[1]. Therefore, milk provides much more than calcium. Calcium supplements may be seen as an addition to the amount of calcium that is obtained from food, but not as an adequate replacement for milk and products made from milk.

Studies on calcium supplementation show low compliance in taking the supplements. This is possibly related to the size of calcium tablets and the gastrointestinal side effects associated with their use. People not eating a balanced diet could mistakenly believe that calcium tablets or supplements can serve as a substitute for a balanced diet and healthy lifestyle.

Milk or products made of milk can easily be included in our daily diet. One portion (200 ml) of milk provides around 30% of the daily recommended amount of calcium. Calcium is important for building and maintaining bones and teeth. Other nutrients, such as phosphorus and protein, are also important for bone health. Milk and products made of milk are another good source of these nutrients as well as of vitamin B2 and B12.

Based on:

1. Bonjour JP. Calcium and phosphate: a duet of ions playing for bone health. J Am Coll Nutr 2011;30:438S-48S.
2. Heaney RP. Dairy and bone health. J Am Coll Nutr 2009;28 Suppl 1:82S-90S.
3. Weaver CM. Role of dairy beverages in the diet. Physiol Behav 2010;100:63-6.
4. NEVO: Netherlands Food Table; nevo-online.rivm.nl.
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6. Miller GD, Jarvis JK, McBean LD. The importance of meeting calcium needs with foods. J Am Coll Nutr 2001;20:168S-185S.
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[1] One portion (200 ml) of pasteurised semi-skimmed milk provides the following percentages of the recommended daily amount (RDA) of nutrients: Protein: 14%. Calcium: 30%. Phosphorus: 29%. Vitamin B2: 26%. Vitamin B12: 35%. Source: Nevo 2011.

What are the nutritional differences between soy drink and milk?

Milk and soy drink are often compared with one another, but are in fact very different products in terms of origin, taste and nutritional value. Milk is a product that naturally contains important essential nutrients: protein rich in essential amino acids and vitamin B2, vitamin B12, calcium, phosphorus, and potassium. Soy drink is made from soybeans (often from South America), and is a source of protein and magnesium. Many soy drinks are fortified with calcium and vitamin B2 and B12, making their nutritional value closer to that of milk. Both milk and soy drink can contribute to a healthy diet, but there are clear differences between the two products.

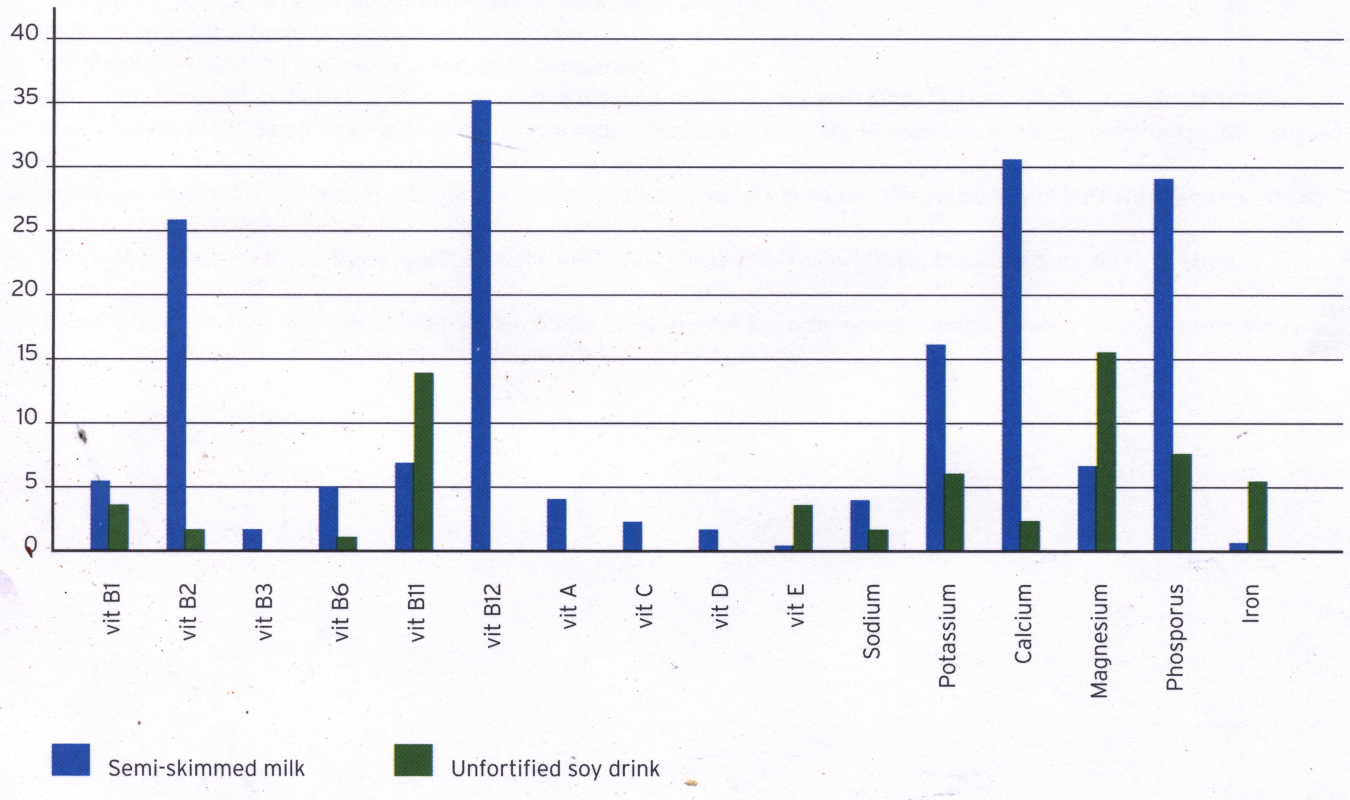
The quality of dietary protein depends on the digestibility of the protein and the level of essential amino acids in proportion to the amino acid requirement. While the protein quality of soy drink is good, milk protein contains more essential amino acids and is therefore of better quality. The digestibility of milk protein is also higher. According to a 2013 report from the FAO detailing a new method of determining protein quality (known as the DIAAS method), milk protein scores 10%-30% higher than the highest quality soy protein isolate.

Meanwhile, two-thirds of the fat in milk is saturated, while for soy the proportion is only 15%. To achieve a healthy cholesterol level and thus maintain a healthy cardiovascular system, it is recommended that saturated fats be replaced with unsaturated fats. But milk consists of more than just saturated fat. Recent scientific research suggests that normal consumption of milk and milk products has a neutral effect on cardiovascular health. So the relationship between milk and cardiovascular health appears to be more subtle than previously thought. Even though certain components of soy (lecithin and isoflavones) are sometimes linked to cholesterol reduction, the European Food Safety Authority (EFSA) considers the evidence insufficient.

There are also differences in terms of micronutrients. Milk is inherently rich in calcium and vitamin B12, and is a source of vitamin B2, phosphorus, and potassium. Soy has a different micronutrient profile, and is a source of magnesium. Because soy drink is often used to replace cow's milk, many manufacturers add nutrients to soy drinks. Their specific choices differ across countries. In the Netherlands, soy drink is often fortified with calcium and vitamin B2 and B12—in the US, with calcium and vitamin A and D. Figure 1 provides an overview of how the various micronutrients from semi-skimmed milk and (unfortified) soy drink contribute to the recommended nutritional intake (%DRI per 200ml glass).

Although both milk and soy drink can contribute to a healthy diet, they differ in terms of their nutritional aspects. Health authorities worldwide recommend a daily consumption of 2-3 servings of milk and milk products. Two glasses of pasteurised milk (400ml) contribute 15%-70% of the daily recommended intake of protein, vitamin B2, B5, B8, B12, calcium, phosphorus, potassium, zinc and iodine.

FIGURE 1 Contribution of micronutrients from 200ml of semi-skimmed milk and unfortified soy drink to the recommended intake (%DRI).



Source: NEVO table (www.nevo-online.rivm.nl, entry 286); if unavailable: internal FrieslandCampina data.

Based on:

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2. Calculated from data included in the Sub-committee report "The assessment of amino acid digestibility in foods for humans and including a collation of published ileal amino acid digestibility data for human foods" based on rat ileal digestibility.
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10. EU claims register: http://ec.europa.eu/food/food/labellingnutrition/claims/community_register/index_en.htm.
11. NEVO Dutch Food Composition Table: http://nevo-online.rivm.nl/.

Does drinking milk stimulate the production of mucus in the mouth?

There is no scientific evidence for a link between drinking milk and increased mucus production. Milk and foods with a similar 'mouth feel', such as drinks containing soy, briefly coat the mouth and throat. This milky coating only lasts a very short time. This is not the same as mucus production.

Some people think there is a link between drinking milk and mucus production in the upper and lower respiratory tracts. They believe milk should be removed from their diet and stop drinking it. The thin layer temporarily formed in the mouth by milk is often mistaken for increased mucus production. Scientific studies of milk and mucus production do not support an association between the two. Even in volunteers with a cold, drinking milk had no effect on mucus production.

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Do you get acne by drinking milk?

Some people believe consuming milk and products made of milk contribute to the development and severity of pimples and acne. However, scientific research on the relationship between milk and acne provides no conclusive evidence of a correlation between diet and acne.

Acne is a skin condition characterised by numerous red inflamed pimples. The pimples are caused by the hormone testosterone, which provokes the glands in the skin to produce sebum. When there is excessive sebum production pores in the skin fill with sebum, bacteria, and dead cells, resulting in the formation of a pimple.

The cause of acne appears to be in factors such as skin type, genetics, hormones and environmental pollutants. There is no scientific evidence for the influence of a particular dietary pattern or a specific nutrient on the formation of acne or acne becoming worse.

According to the Dutch Association for Dermatology and Venereology (Nederlandse Vereniging voor Dermatologie en Venereologie) it is not justified to recommend -or restrict- certain foods for people with acne. On their website www.huidartsinfo.nl is stated that acne is not caused by eating certain foods. Especially pork, chocolate and chips are considered to be the culprits. Scientific research did not establish this connection. Also food allergies do not have influence on acne. The Association indicates that well-designed elimination studies are needed for proper recommendations about acne and nutrition. This indicates that there is no reason to discourage the use of milk or products made of milk for people with acne.

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4. American Academy of Dermatology (http://www.aad.org/skin-conditions/dermatology-a-to-z/acne)
5. www.huidartsinfo.nl

Can people with lactose intolerance consume milk and products made of milk?

Part of the world's population can not digest lactose. This is called lactose intolerance. People with lactose intolerance can tolerate around 12g of lactose per day. This is about 250 ml milk. In addition, semi-hard cheeses hardly contain lactose, and can therefore be eaten.

Lactose intolerance occurs in around two-thirds of the world population. We speak of lactose intolerance when children aged over five years are less able to digest lactose, due to decreased levels of the enzyme lactase in the intestine. Because of the inadequate levels of the enzyme lactase, high amounts of lactose are present in the colon of people with lactose intolerance. The bacteria present in the large intestine ferment the lactose causing gas production, which may cause discomfort.

The one-third of the world simply can tolerate lactose. They have an adaptation in a gene that ensures the enzyme lactase is produced at high levels beyond childhood.

The treatment of lactose intolerance consists of omitting lactose from the diet. Usually, it is not necessary to eat completely lactose-free food. Small amounts of lactose usually cause no discomfort and are not harmful. Although some people do have complaints with an intake of less than 6 g of lactose most people with diagnosed lactose intolerance can digest about 12 g of lactose per day (about 250 ml of milk) with little to no symptoms. This is especially so if consumption is spread throughout the day, taken with meals and using products with a low lactose content. Yoghurt is another option as it has lower lactose levels, and hard cheeses, which contain hardly any lactose. Soft cheeses do contain lactose. Lactose free milk is available in most supermarkets. Given these options, even people with lactose intolerance can benefit from the essential nutrients provided by milk and products made of milk as part of their diet.

Worldwide prevalence of lactose intolerance in recent populations (schematic)

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2. Shaukat A, Levitt MD, Taylor BC, et al. Systematic review: effective management strategies for lactose intolerance. Ann Intern Med 2010;152:797-803.
3. EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on lactose thresholds in lactose intolerance and galactosaemia. EFSA Journal 2010;8(9):1777. [29 pp.]. doi:10.2903/j.efsa.2010.1777. (http://www.efsa.europa.eu/en/efsajournal/pub/1777.htm)
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5. Heyman MB. Lactose intolerance in infants, children, and adolescents. Pediatrics 2006;118:1279-86.
6. Wilt TJ, Shaukat A, Shamliyan T, et al. Lactose intolerance and health. Evid Rep Technol Assess (Full Rep) 2010:1-410.

Can children outgrow an allergy to cow's milk protein?

Cow's Milk Protein Allergy (CMPA) is defined as an undesirable reaction to the milk protein caused by an abnormal reaction in the body's immune system. Its prevalence ranges between 2% and 7% in babies and toddlers, and decreases into adulthood to a prevalence of 0.1 - 0.5%. Although it is often said that more and more young children are becoming allergic to cow's milk protein, there is no scientific evidence to support this and its prevalence seems to be generally overestimated.

An allergy to cow's milk protein is the most frequently diagnosed food allergy in infants and toddlers. Recovery often occurs naturally and most children grow out of their allergy. The duration of an allergy to cow's milk protein varies, but most children outgrow the allergy before they reach the age of two or three years.

Despite the lack of evidence that CMPA is becoming more prevalent, the percentage of parents believing their child has CMPA (or any other food allergy) ranges from 5% to 20%. Before any dietary advice is given, an adequate diagnosis must be made by a medical professional. Once an infant or toddler is properly diagnosed with CMPA, an adapted dietary regimen should be determined in collaboration with a medical doctor or dietician.

Based on:

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4. Kneepkens CM, Meijer Y. Clinical practice. Diagnosis and treatment of cow's milk allergy. Eur J Pediatr 2009;168:891-6.
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Does drinking milk have an effect on the acid-base balance of the body?

It is sometimes suggested that the modern Western diet, protein-rich and with products containing phosphates, has an acidifying effect on the body. Milk is often mentioned as one of those products. However, science shows that milk does not have an negative effect on the calcium balance in the body.
The presence of protein, phosphorus and calcium even helps with the maintenance of the bones.

According to the underlying theory of acid-based balance, proteins in the diet, as well as phosphates, make the blood more acidic. The result of a slightly lower acidity (in more acidic blood) results from calcium being drawn from the bones as the body attempts to neutralise the blood. The theory behind this is based on more calcium found in acidic urine after drinking milk. Alkaline dietary patterns, for example those high in vegetables and fruit, are said to help decrease the acidity and to make the body less 'acid'.

Although a higher protein intake does lead to a higher acid level in the urine, and more calcium excretion via the urine, this has no effect on the overall calcium balance in the body: that is, the difference between dietary intake of calcium and its excretion via urine and faeces. With a higher protein intake, the body absorbs more calcium from food. Similarly, increased phosphates in the diet do not affect the calcium balance. A diet with sufficient protein helps to preserve bones. The scientific panel of the European Food Safety Authority (EFSA) concluded, on the basis of the overall scientific research, that there is a cause and effect relationship between the intake of protein, phosphorus and calcium, and the preservation of bones.

Based on:

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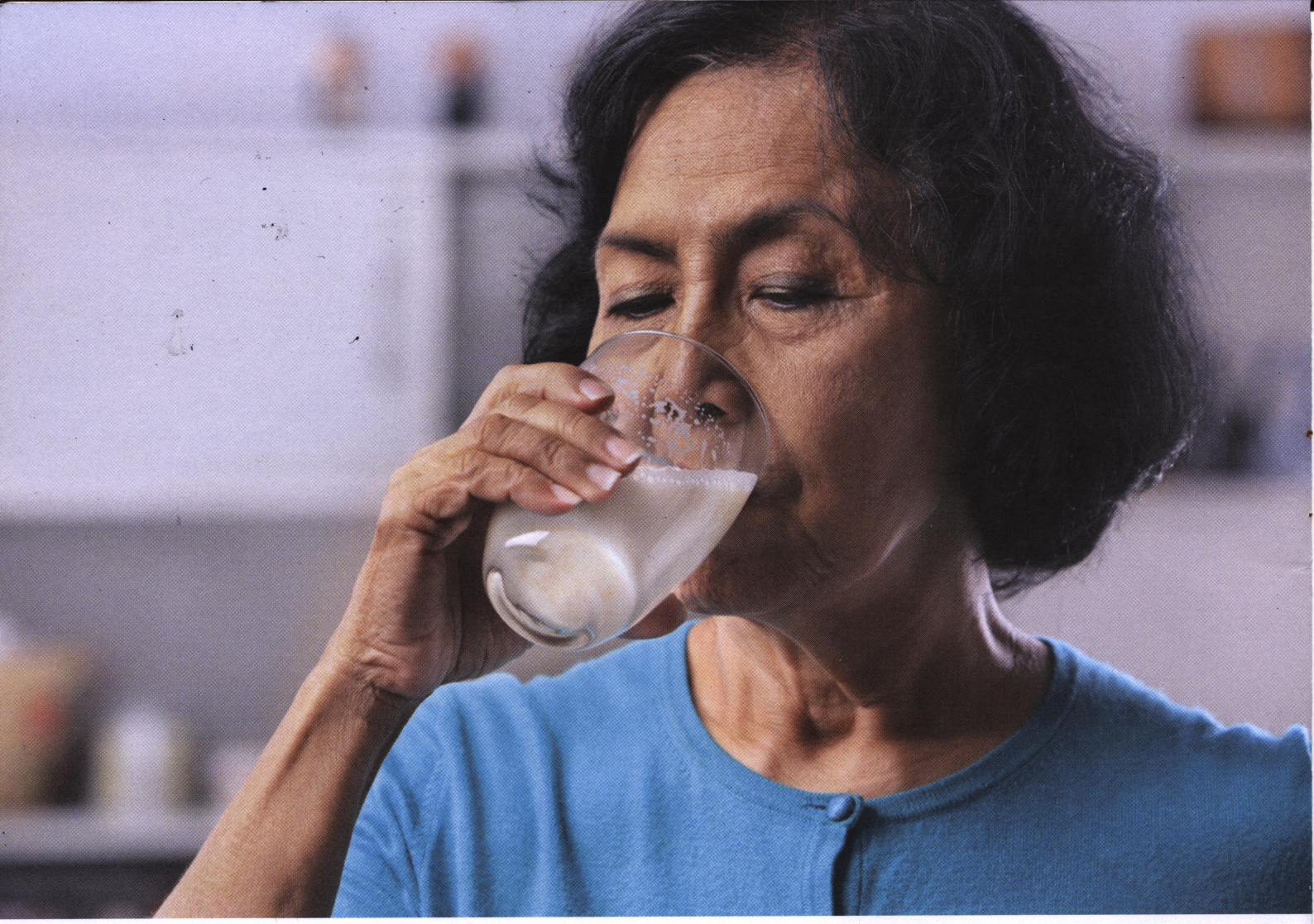

Does drinking milk have an effect on the health of the hearth and blood vessels?

To maintain a healthy heart and blood vessels, the World Health Organization advises consumers to use mainly skimmed or semi-skimmed (half fat) milk or products made from milk. The relationship between milk, and products made from milk, and health of heart and blood vessels seems to be more complex than previously assumed.

All over the world milk and products made from milk are incorporated in dietary recommendations. Milk-fat is two-thirds saturated fat. Replacing saturated fat in the diet by unsaturated fat is recommended for a healthy cholesterol level and thus maintaining a healthy heart and blood vessels.

Milk, however, consist of more than saturated fat. Recent scientific research indicates that a regular intake of milk and milk products has a neutral effect on the health of heart and blood vessels. Because of this, the relationship between milk, and products made from milk, and health of heart and blood vessels seems to be more complex than previously assumed.

FrieslandCampina follows the official advice from authorities in health and nutrition and offers a wide range of milk and products made from milk with varying fat contents, so consumers can choose the best option for them.

Based on:

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Should people drink cows' milk, isn't it meant for calves?

Milk is meant for calves, but it can be used by humans. As long as 6,000 - 10,000 years ago, people kept cows, goats and sheep for their milk. Milk is a valuable source of vital, essential nutrients including protein, vitamin B2 and B12 and minerals including calcium, phosphorus and potassium. Consuming milk or products made of milk can be a tasty way to take these nutrients.

Just as humans discovered that grains are edible, and eggs contain useful nutrients, humans discovered milk is very nutritious too. Cows are ruminants and are able to convert grass, which cannot be digested by humans, into milk: a valuable source of indispensable, essential nutrients.

Based on:

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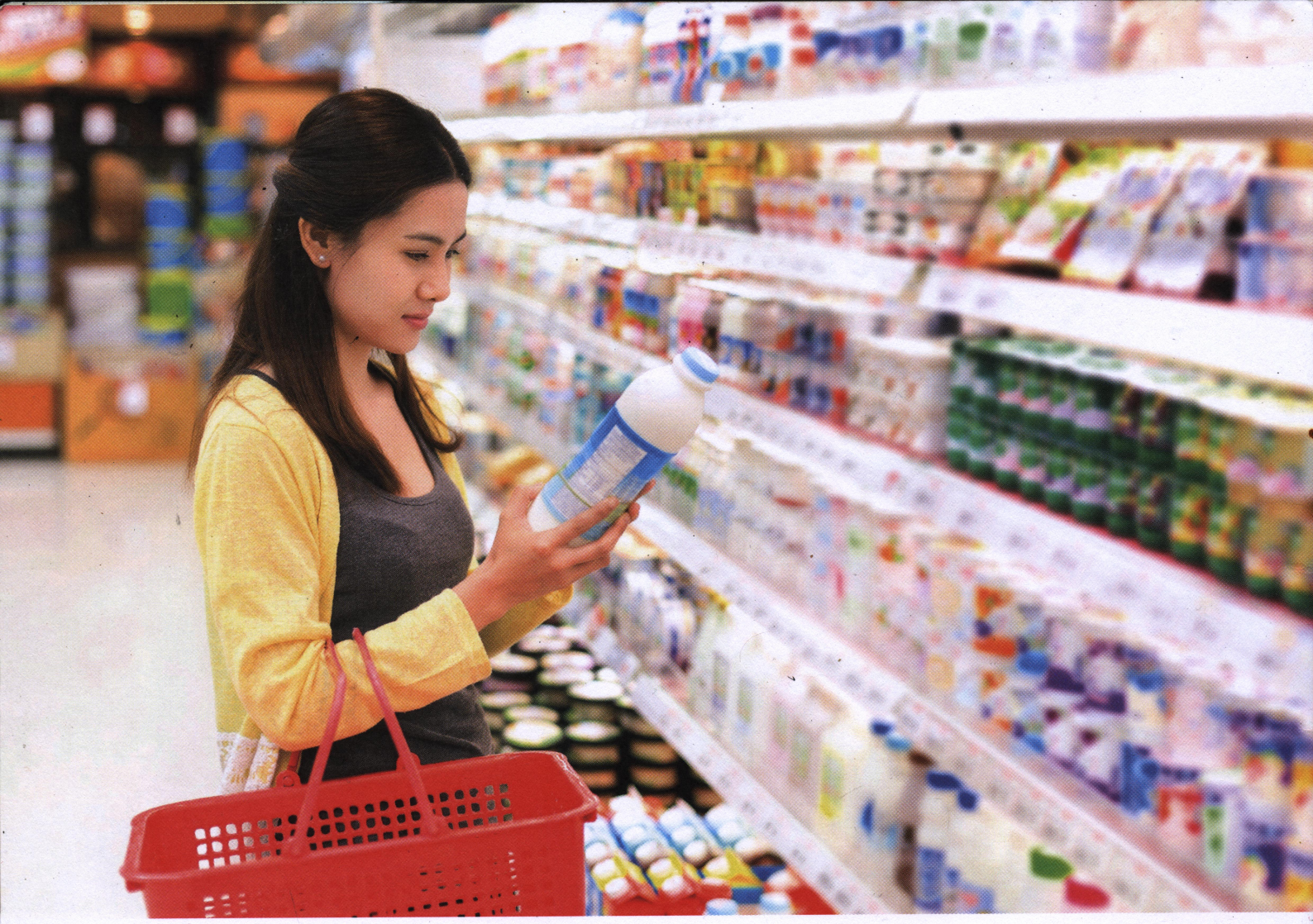

What is the true story behind antibiotics and milk?

Antibiotics do not belong in milk and there are strict controls in the use of antibiotics in stock farming. FrieslandCampina has strict procedures to ensure there are no antibiotics in its milk and products made of milk.

Antibiotics are medication used to prevent and combat infections in humans and animals. For example, farmers use antibiotics to treat udder infections. As antibiotics are not allowed in milk or products made of milk, cows treated with antibiotics are milked separately from the rest of the herd for a specific period of time, usually between 3-7 days. This milk is not processed.

There are several control points in the dairy chain at FrieslandCampina:

- Member dairy farmers are obliged to keep a drug register, which is checked by an independent third party.
- Each tank of milk is tested for the presence of antibiotics before the milk is transported to the factory.
- Whenever FrieslandCampina uses and buys raw milk, the milk is always tested before it reaches the factory.

If any trace of antibiotics is found the entire content of the milk tank is destroyed, with the farmer receiving a severe penalty. To prevent antibiotic resistance it is very important that the correct type and amount of medication is used, with the aim of lowering the overall usage. Foqus Planet, the FrieslandCampina programme for farmers, has strict requirements for the correct use and documentation of antibiotics.

Based on:

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4. Bundesamt für Verbraucherschutz und Lebensmittelsicherheit: http://www.bvl.bund.de/DE/Home/homepage_node.html
5. Belgisch Federaal Voedsel Agentschap: http://www.favv-afsca.fgov.be/

FrieslandCampina

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